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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/802,502

03/17/2004

Dana Brad

79071

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EXAMINER

WANG, CLAIRE X

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

05/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/802,502

Applicant(s)

BRAD ET AL.

Examiner

Claire Wang

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10-12-05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 14-19 and 23-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Cofer et al. (US 6,841,780 hereinafter "Cofer").

As to claim 14, Cofer teaches a system for detecting an object (Col. 1, lines 10-12), comprising a light pattern generator projecting a light pattern beam across a defined area and producing a light pattern in the defined area (72 Fig. 7); a digital imaging device for detecting the light pattern produced by the light pattern generator (76 Fig. 7); and a controller having a memory with a stored image of a non-obstruction pattern detected in the defined area as produced by the light pattern generator (6 Fig. 1A); and the controller periodically compares said image stored in the memory with the light pattern detected by the imaging device produced by the light beam shining across the defined area and recorded by the digital imaging device (80 Fig. 7).

As to claim 18, it is the method claim of claim 14. Claim 18 differs from claim 14 in that claim 18 further teaches the digital imaging device the optical pattern at an off-set angle to the projected beam (See Figs. 2A-2B).

As to claim 23, it differs from claim 18 in that claim 23 refers to the optical pattern discussed in claim 18 as optical illumination and claim 23 does not teach the digital imaging device the optical pattern at an off-set angle to the projected beam.

Examiner's note: optical pattern and optical illumination refers to the same thing according to applicant's specification, thus claim 23 is analyzed in the same manner as claim 18. Please see above for details.

As to claim 15, Cofer teaches wherein when the controller detects a difference between the digital representation of the light pattern produced by detecting the defined area and the image stored in a memory, the controller initiates an alarm (Col. 5, lines 35-37).

As to claim 16, Cofer teaches wherein the image stored in the memory is of a substantially straight line produced by the pattern generator in absence of an object in the defined area (Figs. 5A-5C shows an example of projected pattern that is straight parallel lines and when an object is detected the lines are no longer straight).

As to claim 17, Cofer teaches wherein the digital imaging device is a CCD camera (Col. 4, line 3), which is installed at an offset angle from the laser device (Figs. 2A-2B).

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As to claim 19, Cofer teaches generating an alarm signal responsive to the control signal (Col. 5, lines 35-37).

As to claim 24, it is the same as claim 19. Please see claim 19 for detail analysis.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-12, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laird (US 2003/0118237) in view of Cofer.

As to claim 1, Laird teaches a barrier operator for moving a barrier between open and closed positions with respect to a barrier opening (a system that detects objects entering a garage door; Paragraph [0010], lines 1-3), comprising an imaging device to observe a portion of the barrier opening as illuminated by the optical pattern (CCD camera views the pattern; [0011], lines 2-4); and a controller coupled to the imaging device to sense when the optical pattern in the observed portion of the barrier opening changes, and generating a detection signal in response thereto (when an object enters the field of vision of the camera, it interrupts the viewing of the recognized pattern and the processor decides whether or not the object is an intrusion; if it is an intrusion, then a signal is sent to the head unit of the garage door operator; [0011], lines 12-22). A pattern, which is positioned on the side wall of the door ([0011], lines 1-4). However Laird does not teach the pattern used is generated using light projections.

Cofer teaches an apparatus for detecting objects by projecting one or more patterns onto the monitored area (Col. 1, lines 52-54). Thus Cofer's method of projecting patterns reads on the claimed light projections. Therefore, it would have been obvious for one ordinarily skilled in the art at the time the invention was made to combine Laird's system of object detection that enters a garage door with Cofer's method of pattern projection in order to be more sensitive to the presence and motions of 3-D objects (Cofer Col. 1, lines 49-52).

As to claim 2, Laird teaches apparatus for periodically recording images detected by the imaging device ([0011], lines 8-9).

As to claim 3, Laird teaches wherein the controller periodically compares an observed pattern detected by the imaging device with a digital representation of a non-obstacle pattern previously detected and recorded ([0011], lines 17-19).

As to claim 4, Cofer teaches wherein the non-obstacle pattern is a substantially straight line (Figs. 5A-5C shows an example of projected pattern that is straight parallel lines and when an object is detected the lines are no longer straight).

As to claim 5, Laird teaches wherein the digital imaging device observes the barrier path at an angle to the scanning device (the camera is aimed onto the sidewall

wit the patter in such a way that the camera looks across the door opening to the pattern on the wall; [0011], lines 4-7).

As to claim 6, Laird teaches an alarm device to generate an alarm indication in response to the detection signal ([0011] lines 20-22).

As to claim 7, Cofer teaches wherein the alarm indication is an audible signal (sound an alarm; Col. 5, lines 35-37).

As to claim 8, Cofer teaches wherein the alarm indication is a visual signal (shut down the machine is something that can read as a visual signal or some other action could also be read as a visual signal; Col. 5, lines 35-37).

As to claim 9, a barrier drive unit for moving the barrier, and wherein the controller is responsive to the detection signal to control the barrier drive (barrier movement operator; [0005], line 6).

As to claim 10, Laird and Cofer teach wherein the light pattern generator comprises a source of electrical energy (Laird [0010], lines 6-8); a laser diode (Cofer Col. 3, line 59); and an optical lens to focus a beam generated by the laser diode (Cofer Col. 3, line 61).

As to claim 11, Laird teaches wherein the imaging device is a CCD camera (1 Fig. 1).

As to claim 12, Cofer teaches wherein the light pattern generator is disposed on the barrier (projecting one or more patterns onto the monitored area and in this case the monitored area is the side wall of the garage door; Cofer Col. 1, lines 52-54).

As to claim 21, it differs from claim 1 in that it does not teach generating a detection signal in response to the detection of an obstacle that claim 1 teaches. Please see claim 1 for detail analysis.

As to claim 22, it differs from claim 21 in that claim 22 further teaches of the light pattern can be enabling or disabling (Laird teaches the pattern detected when correlated with the stored images, if a match is not found then the object is considered to be an intrusion and thus a signal is sent to the head unit of the garage door operator; this clearly shows that the image retrieved is able to enable or disable the system; [0011], lines 12-22).

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Laird in view of Cofer.

As to claim 13, Laird teaches a barrier movement operator ([0005], line 6). Laird does not expressly disclose that the barrier movement operator contains a head unit with a motor for moving the barrier. However, Examiner takes Official Notice that a motor for moving barriers is well known in the art. It would have been obvious at the time of the invention was made to one of ordinary skill in the art to add a motor to the barrier movement operator since Examiner takes official notice that motors are commonly used to move barriers.

7. Claims 20 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cofer in view of Laird.

As to claim 20, Cofer does not teach controlling a movement of a barrier in the defined area in response to the control signal. However, Laird teaches detecting objects by digital imaging device and also teaches a barrier movement operator. Thus, the barrier movement operator of Laird reads on the claimed controlling movement of a barrier. Therefore, it would have been obvious for one ordinarily skilled in the art at the time the invention was made to combine Cofer's object detection system with Laird's system of detecting objects in with in a barrier that contains a barrier movement operator because they are in the same field of invention.

As to claim 25, it is the same as claim 20. Please see above for detail analysis.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fitzgibbon (US 2005/0168321) teaches a method for image recognition facilitated movable barrier operations.

Wang et al. (US 6,961,763) teaches an automation system for controlling and monitoring devices and sensors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Claire Wang whose telephone number is 571-270-1051. The examiner can normally be reached on Mid-day flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Claire Wang
04/25/2007



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SUPERVISORY PATENT EXAMINER